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ABSTRACT

This study attempted to assess the relationship between misreading of high-frequency words and utilization of semantic and syntactic cue systems. A 250-word passage from a second-grade basal reader was altered in two ways: in one condition, the sentences were randomly ordered, and, in the other, the words were randomly ordered. Twenty-four fourth graders, 12 good readers and 12 poor readers, were asked to read orally both the altered versions and the original passage. Data were collected on general word-identification accuracy and on time needed to complete the readings in each condition. The analysis indicated a considerable difference in mean time needed to complete the readings for both groups. Despite the fact that the random-word condition depressed performance for both groups an almost identical amount, the proportional increase in time needed by good readers was dramatically greater than that needed by poor readers. The random-word condition had a more disturbing effect on poor readers' performances with regard to high-frequency, low-discriminability words. The clearest implications of these findings consitute a rejection of the notion that misreading is simply traceable to perceptual confusion. (KS)

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The Misreading of High Frequency Words

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Paper presented at the New England Educational Research Organization Conference, Provincetown, Massachusetts, May 6, 1976.

Introduction. The etiology of the misreading of high frequency words has long been thought to lie in a visual perceptual deficit (c.f. Orton, 1925, 1937). However, a variety of recent research studies have demonstrated that even though poor readers often misread these stimuli, they sustain no visual perceptual deficit when compared to normal and good readers (Allington, et al, 1976; Vellutino, et al, 1972, 1975). Similarly others have demonstrated that optical similarity is not a sufficient condition to account for these errors (Shankweiler and Liberman, 1972). One yet unexplored facet of these misreadings is the relative availability and use of the semantic and syntactic cue systems by readers. That is, good readers may misread less often in context as a result of effective utilization of these cues while poor readers utilize these cues less often and therefore misread high frequency words more often (Smith, 1973).

Materials. A passage of approximately 250 words was selected from a second grade basal reader. The passage was rated at a 2.8 readability level (Spache, 1953). This passage was then altered in two separate ways; in one condition the sentences (n = 14) were randomly ordered, and in the other, the words were randomly ordered. The experimental materials were: the passage in the three conditions; original (O), random sentence (RS), and random word (RW). For all conditions the stimuli were presented in horizontal lines retaining the left-right and top to bottom reading patterns (see fig. 1).

INSERT FIGURE 1 ABOUT HERE

Subjects. All fourth graders in a rural elementary school were individually screened for reading ability on the Word Identification Test of the Woodcock Reading Mastery Tests (AGS, 1973). Students with raw scores between 50 and 96 (2.0 and 3.6 grade equivalents) were classified as poor readers since achievement lagged behind grade placement by at least one year. From this group of poor readers, 12 subjects were randomly selected for the experimental tasks. Students with raw scores between 108 and 127 (grade equivalents of 4.5 and 7.0) were classified as good readers and from this group 12 subjects were also randomly selected.

The mean raw score for the poor reader group was 76.25 (2.8 grade equivalent), while the mean raw score for the good reader group was 113.25 (4.9 grade equivalent). The mean chronological ages for the poor and good reader groups were 9.5 and 9.6 respectively. Sex distribution for the poor reader group was 9:3 males to females while for the good reader group the males to females ratio was 6:6.

Procedure. All subjects were tested individually in a small room adjacent to the classrooms. Subjects were told they were going to read a story three times but that two versions of the story had been altered to make it more difficult to read. They were then directed to simply read each of the passages aloud as best they could. Prior to the experimental session, discussions of experiments versus testing had been carried out in the classrooms. However, subjects were again reminded at the beginning of each experimental session that this was not a test but rather an experiment to see how persons learn to read.

Each subject was presented with the passage in each of the three conditions, though the order of presentation was randomly assigned to control for effects of familiarization with the experimental materials.

Subjects reading performance was tape recorded for later analysis. Time data for the oral reading of each version of the passage was recorded during the experimental session.

Scoring. Three sets of data derived from the performance were of interest. First, the time data which allowed comparisons within and between groups on each of the tasks. This data was collected during the experimental session and was simply recorded as number of seconds each subject took to complete the oral reading in each condition. The second set of data was general word identification accuracy. These data simply reflect the number (or percentage) of total words correctly identified in each condition. This analysis was completed from listening to the audio recordings. The final set of data was the misreading of the high frequency low discriminability words which appeared in the original passage and therefore also appeared in the RS and RW conditions. Only words which had had a greater than 5% error rate in the Allington (1976) study were identified and used in this analysis (Figure 1 lists these words).

Results. A repeated measures analysis of variance was computed for the time data. This analysis indicated a significant effect for Groups ($F=8.736, df=1/22, p. < .01$) and a significant effect for Conditions ($F=9.909, df=2/44, p. < .01$) but no significant interaction effect. As Figure 2 shows there existed considerable differences in mean time on all conditions for the two groups. However, despite the fact that the RW condition depressed performance for both groups at an almost identical amount, the proportional increase in time on the RW condition for the good readers was dramatically greater than for the poor read-

er group (.91 vs .30).

A second repeated measures analysis of variance was computed for the accuracy data. Significant effects for Groups (F= 10.24, df=1/22, p.< .01) were found as for Conditions (F= 30.8,df=2/44, p.< .01) and for the interaction effect (F=15.92,df=2/44,p.< .01). Figure 4 depicts the performance on the accuracy tasks.

The final analysis was a comparison of the groups for performance on the high frequency low discriminability words. In this instance again, attention should be drawn to the RW condition in Figure 5. This condition clearly had a far more disturbing effect on the poor readers performance than it did on the performance of the good readers.

Discussion. The clearest implication of these findings constitute a strong rejection of Orton's notion that misreading is simply traceable to perceptual confusions or visual similarity. Moreover, these findings lend only partial support to Smith's (1973) claim that the good readers accuracy can be solely attributed to the effective use of context. Unexplained by Smith (1973), as well as our data, is why the context had such a facilitative effect on the poor readers accuracy performance but had little effect on accuracy in the performance of the good readers. These results are all the more interesting when one considers the correspondingly opposite effect which the context exerted on the time data.

O

There once was a girl who was good and kind, but very poor. Many nights she and her mother had to go to bed hungry. Finally, there was no food anywhere in the house, and they were very hungry.

The girl took a basket and went out to the forest to look for some ripe berries or nuts to eat.

RS

"Take it home and put it on the stove," she said. The girl took a basket and went out to the forest to look for some ripe berries or nuts. Then she began to tell her how to use it. "At once it will cook a good meal." Many nights she and her mother had to go to bed hungry. "And the little pot will stop cooking until the next time you speak to it." Then speak these words: "Cook, little pot, cook."

RW

put once kind forest how nuts she want a
forest cooking mother eat woman go this the
very was ripe to for many to was words until
the these poor went knew food your pot it time
the say began a black said kind handing spoke to
they once stop woman girl turned berries and
very the you take these then her said woman

FIGURE 1: Illustrative Samples of the Text in Each of the Three Conditions: Original (O), Random Sentence (RS) and Random Words (RW).

Fig. 2: The High Frequency Words (from Allington, 1976).

Began	*then
black	*there
but	these
came	they
***her	took
*how	**very
knew	want
look	**was
no	well
on	went
put	*were
some	when
tell	who

*each asterisk marks additional occurrences in materials.

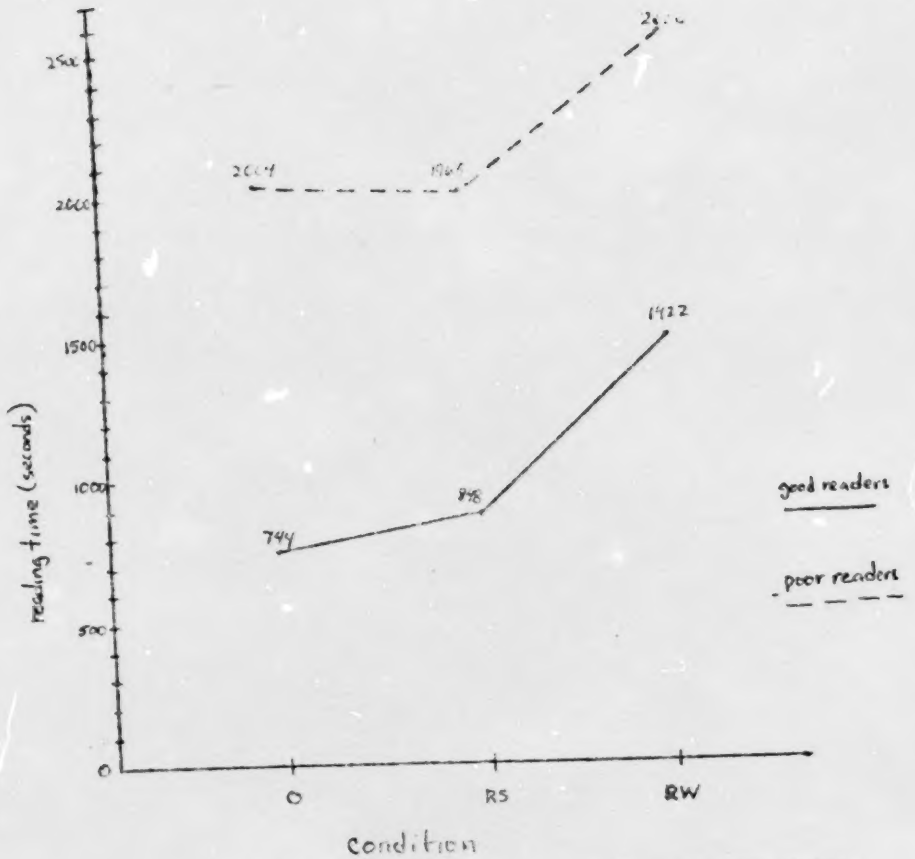

FIGURE 3 : AMOUNT OF READING TIME ON EACH CONDITION FOR BOTH GROUPS.

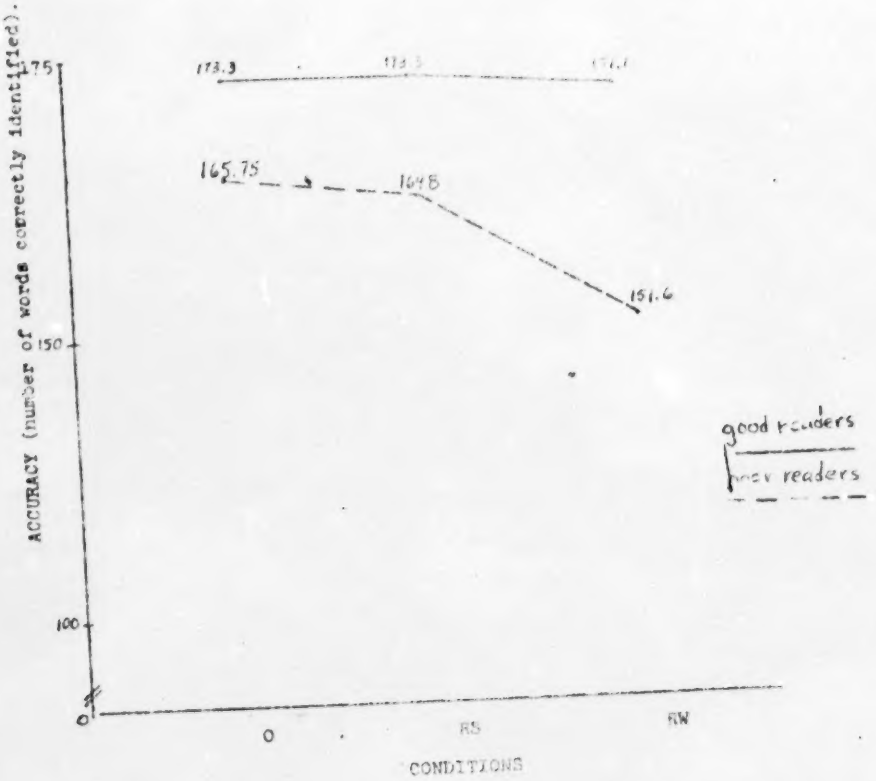

FIGURE 4 : MEAN ACCURACY ON EACH CONDITION FOR BOTH GROUPS.

Fig. 5: Group Means and Percent Correct for Each Condition on Recognition of the High Frequency Words.

Group	Conditions O		RS		RW	
	X	%	X	%	X	%
Good Readers	35.5	98.6	35.6	99	35	97.2
Poor Readers	33.7	93.5	33.3	92.3	28	77.7

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